CLAIMS

1. Method for noise reduction in an audio device whereby an electrical and/or digital signal which represents sound is routed simultaneously through:
- a signal analysis path, and
- a signal processing path wherein the signal amplification is individually controllable in specific frequency bands by attenuation values derived from the signal analysis path,
whereby the signal in the signal analysis path is routed simultaneously through:
- a first detector which identifies the presence of speech indicators in the overall signal, and
- a second detector which in a predefined number of frequency bands detects the modulation amplitude, and
- where attenuation values in each of the predefined frequency bands are calculated based on the combined results of the first detector and the modulation amplitude in the specific frequency band detected by the second detector,
- where the attenuation values in the predefined number of frequency bands are routed to the signal processing path in order to attenuate the signal level in corresponding frequency bands.

2. Method as claimed in claim 1 whereby the second detector calculates the modulation amplitude by tracking peeks in the signal level and tracking the noise floor in the signal level and determines the distance between the overall level of the peeks and the noise floor.

3. Method as claimed in claim 2 whereby the level of the noise floor in each frequency band is used to scale the calculated corresponding attenuation value, such that higher noise floor levels results in possible higher attenuation values.

4. Method as claimed in claim 3 wherein the attenuation values in each specific frequency band are calculated in the following way:

- first attenuation values are calculated according to a first predefined transfer function between the modulation amplitude detected by the second detector and attenuation values whereby the first transfer function prescribes generally low attenuation values,
- second attenuation values are calculated according to a second predefined transfer function between the modulation amplitude detected by the second detector and attenuation values whereby the second transfer function prescribes generally high attenuation values,
- fading between the first and the second calculated attenuation values is performed in response to the detected speech presence indicators from the first detector.

5. Method as claimed in claim 1, whereby the first detector for detecting the presence of speech indicators use statistical information relating to possible correlation of modulation in different frequency bands.

6. Hearing aid with means for reducing noise in an input signal, the hearing aid including an input for receiving the input signal, and further comprising
- a signal analysis path, and
- a signal processing path wherein means are provided to amplify the signal in frequency bands according to attenuation values derived from the signal analysis path, whereby the signal analysis path comprises:
- a first detector which has means for identifying the presence of speech indicators in the overall signal, and
- a second detector which has means for spectral determination of modulation amplitude, and
- where the signal analysis path has means for calculating attenuation values in each of the predefined frequency bands based on the combined results of the first detector and the modulation amplitude in the specific frequency band detected by the second detector,
- where further means are provided for routing the attenuation values in the predefined number of frequency bands to the signal processing path in order to attenuate the signal level in frequency bands.

7. Hearing aid as claimed in claim 6 whereby the second detector comprises means for tracking peeks in the signal level and means for tracking the noise floor in the signal level and means for determining the distance between the overall level of the peeks and the noise floor.

8. Hearing aid as claimed in claim 6 whereby the level of the noise floor in each frequency band is used in a scaling means for scaling the corresponding attenuation value, such that higher noise floor levels results in possible higher attenuation values.

9. Hearing aid as claimed in claim 6 wherein the means for calculating the attenuation values in each specific frequency band comprises:
   - means for calculating first attenuation values according to a first predefined transfer function between the modulation amplitude detected by the second detector and attenuation values whereby the first transfer function prescribes generally low attenuation values,
   - means for calculating second attenuation values according to a second predefined transfer function between the modulation amplitude detected by the second detector and attenuation values whereby the second transfer function prescribes generally high attenuation values,
   - fading means for fading between the first and the second calculated attenuation values in response to the detected speech presence indicators from the first detector.